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Transport of Alaskan dust into the Gulf of Alaska and comparison with similar high-latitude dust environments.

An airborne flux of the micronutrient iron, derived from dust originating from coastal regions may be an important contributor of iron to the Gulf of Alaska's (GoA) oligotrophic waters. Dust blowing off glacier termini and dry riverbeds is a recurring phenomenon in Alaska, usually occurring in the autumn. Since previous studies assumed that dust originating in the deserts of Asia was the largest source of airborne iron to the GoA, the budget of aeolian deposition of iron needs to be reassessed.

Since late 2010, our group has been monitoring dust activity using satellites over the Copper River Delta (CRD) where the most vigorous dust plumes have been observed. Since 2011, sample aerosol concentration and their composition are being collected at Middleton Island (100km off shore of CRD).

This presentation will show a summary of the ongoing dust observations and compare with other similar environments (Patagonia, Iceland) by showing case studies. Common features will be highlighted.